

WHAT IS CLAIMED IS:

1. A method of manufacturing a semiconductor device comprising:  
forming an amorphous film comprising silicon and germanium;  
providing said amorphous film with a material comprising a metal for promoting crystallization of said amorphous film;  
heating said amorphous film provided with said material to crystallize said amorphous film, thereby, forming a crystallized film;  
removing said material from the crystallized film by gettering.
2. The method according to claim 1 wherein said metal is selected from the group consisting of Fe, Co, Ni, Ru, Rh, Pd, Os, Ir, Pt, Cu, Au, Ge, Pb, In.
3. The method according to claim 1 wherein said semiconductor device is a flat panel display.
4. The method according to claim 1 wherein said semiconductor device is selected from the group consisting of an information processing terminal, a head mount display, a car navigation system, a portable telephone, a portable video camera and a projector.
5. The method according to claim 1 wherein said amorphous film comprises  $\text{Si}_x\text{Ge}_{1-x}$  ( $0.5 < x < 1$ ).

6. A method of manufacturing a semiconductor device comprising:  
forming an amorphous film comprising silicon and germanium;  
providing a selected portion of said amorphous film with a material comprising a metal for promoting crystallization of said amorphous film;  
heating said amorphous film provided with said material to crystallize said amorphous film, thereby, forming a crystallized film wherein crystallization proceeds laterally from said selected to a portion;  
removing said material from the crystallized film by gettering.

7. The method according to claim 6 wherein said metal is selected from the group consisting of Fe, Co, Ni, Ru, Rh, Pd, Os, Ir, Pt, Cu, Au, Ge, Pb, In.

8. The method according to claim 6 wherein said semiconductor device is a flat panel display.

9. The method according to claim 6 wherein said semiconductor device is selected from the group consisting of an information processing terminal, a head mount display, a car navigation system, a portable telephone, a portable video camera and a projector.

10. The method according to claim 6 wherein said amorphous film comprises  $\text{Si}_x\text{Ge}_{1-x}$  ( $0.5 < x < 1$ ).

11. A method of manufacturing a semiconductor device comprising:

forming an amorphous film comprising silicon and germanium;  
providing a first portion of said amorphous film with a material comprising a metal for promoting crystallization of said amorphous film;  
providing a second portion of said amorphous film with a gettering material;  
heating said amorphous film provided with said material to crystallize said amorphous film, thereby, forming a crystallized film wherein crystallization proceeds laterally from said first portion and said metal is simultaneously getterred by said second portion.

12. The method according to claim 11 wherein said metal is selected from the group consisting of Fe, Co, Ni, Ru, Rh, Pd, Os, Ir, Pt, Cu, Au, Ge, Pb, In.

13. The method according to claim 11 wherein said gettering material comprises an element selected from the group consisting of P, As, Sb.

14. The method according to claim 11 wherein said semiconductor device is a flat panel display.

15. The method according to claim 11 wherein said semiconductor device is selected from the group consisting of an information processing terminal, a head mount display, a car navigation system, a portable telephone, a portable video camera and a projector.

16. The method according to claim 11 wherein said amorphous film comprises  $\text{Si}_x\text{Ge}_{1-x}$  ( $0.5 < x < 1$ ).

17. A method of manufacturing a semiconductor device comprising:  
forming an amorphous film comprising silicon and germanium;  
providing said amorphous film with a material comprising a metal for promoting crystallization of said amorphous film;  
heating said amorphous film provided with said material to crystallize said amorphous film, thereby, forming a crystallized film;  
removing said material from the crystallized film by gettering;  
patterning said crystallized film to form at least one semiconductor island; and  
forming a gate electrode adjacent to the semiconductor island with a gate insulating film interposed therebetween.

18. The method according to claim 17 wherein said metal is selected from the group consisting of Fe, Co, Ni, Ru, Rh, Pd, Os, Ir, Pt, Cu, Au, Ge, Pb, In.

19. The method according to claim 17 wherein said semiconductor device is a flat panel display.

20. The method according to claim 17 wherein said semiconductor

device is selected from the group consisting of an information processing terminal, a head mount display, a car navigation system, a portable telephone, a portable video camera and a projector.

21. The method according to claim 17 wherein said amorphous film comprises  $\text{Si}_x\text{Ge}_{1-x}$  ( $0.5 < x < 1$ ).

22. A method of manufacturing a semiconductor device comprising:

forming an amorphous film comprising silicon and germanium;

providing a selected portion of said amorphous film with a material comprising a metal for promoting crystallization of said amorphous film;

heating said amorphous film provided with said material to crystallize said amorphous film, thereby, forming a crystallized film wherein crystallization proceeds laterally from said selected to a portion;

removing said material from the crystallized film by gettering;

patterning said crystallized film to form at least one semiconductor island; and

forming a gate electrode adjacent to the semiconductor island with a gate insulating film interposed therebetween.

23. The method according to claim 22 wherein said metal is selected from the group consisting of Fe, Co, Ni, Ru, Rh, Pd, Os, Ir, Pt, Cu, Au, Ge, Pb, In.

24. The method according to claim 22 wherein said semiconductor device is a flat panel display.

25. The method according to claim 22 wherein said semiconductor device is selected from the group consisting of an information processing terminal, a head mount display, a car navigation system, a portable telephone, a portable video camera and a projector.

26. The method according to claim 22 wherein said amorphous film comprises  $\text{Si}_x\text{Ge}_{1-x}$  ( $0.5 < x < 1$ ).

27. A method of manufacturing a semiconductor device comprising:

- forming an amorphous film comprising silicon and germanium;
- providing a first portion of said amorphous film with a material comprising a metal for promoting crystallization of said amorphous film;
- providing a second portion of said amorphous film with a gettering material;
- heating said amorphous film provided with said material to crystallize said amorphous film, thereby, forming a crystallized film wherein crystallization proceeds laterally from said first portion and said metal is simultaneously getterred by said second portion;
- patterning said crystallized film to form at least one semiconductor island; and
- forming a gate electrode adjacent to the semiconductor island with a gate

insulating film interposed therebetween.

28. The method according to claim 27 wherein said metal is selected from the group consisting of Fe, Co, Ni, Ru, Rh, Pd, Os, Ir, Pt, Cu, Au, Ge, Pb, In.

29. The method according to claim 27 wherein said gettering material comprises an element selected from the group consisting of P, As, Sb.

30. The method according to claim 27 wherein said semiconductor device is a flat panel display.

31. The method according to claim 28 wherein said semiconductor device is selected from the group consisting of an information processing terminal, a head mount display, a car navigation system, a portable telephone, a portable video camera and a projector.

32. The method according to claim 29 wherein said amorphous film comprises  $\text{Si}_x\text{Ge}_{1-x}$  ( $0.5 < x < 1$ ).